tion. The gear train **106** is now locked so that power cannot be applied to the impeller **76**. The gate release rod **36** is rotated to its extreme clockwise position where the motor control plate **152** maintains the trigger shaft **116** over the plunger **112** and the gate release catch **34** maintains the gate **32** in a closed position. The sampler is then dropped into the ocean by the cable **54** and lowered to a desired depth. After towing the sampler to a location where a plankton sample is desired the first messenger **56** is dropped whereupon the motor control plate rotates 90° to free the gear train **106** and commence rotation of the impeller **76**. Simultaneously the gate release catch **34** opens the gate **32** to allow entrance of sea water. Water is now being propelled into the plankton bag **72** and the quantity of water propelled is being counted by the counter **28**. After a selected period of time a second messenger (not shown) is dropped whereupon the motor control plate will rotate another 90° to engage and push the stop rod **134** so as to release the stop plunger **130**. The release of the stop plunger **130** causes its bottom end to engage the stop sprocket thereby locking the gear train **106** and stopping rotation of the impeller **76**. Simultaneously the catch **34** closes the gate **32** to prevent the entrance of any water. The sampler may now be retrieved and the plankton bag **72** removed to investigate the catch.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that the invention may be practiced otherwise than as specifically described.

I claim:

1. A stationary plankton sampler comprising:
support means adapted to be connected to a cable;
means, mounted to the support means and having a water entrance and exit, for propelling water, the exit of said means being adapted to mount a plankton bag;
power means mounted to the support means;
drive means mounted to the support means and connecting the power means to the propelling means;
means, mounted to the support means, for locking and unlocking the drive means;
a first trigger means, mounted to the support means, for triggering the locking and unlocking means from a locked to an unlocked condition;
means, mounted to the support means, for stopping the drive means after the drive means has been unlocked by the first trigger means; and
a second trigger means mounted to the support means for triggering the stop means,
whereby water can be selectively passed into the plankton sampler for a selected period of time.

2. A stationary plankton sampler as claimed in claim **1** wherein:
the drive means is a gear train; and
the locking and unlocking means includes a spring biased cocking plunger which is movable between depressed and retracted positions, the cocking plunger in its depressed position lockingly engaging the gear train and the cocking plunger in its retracted position freeing the gear train.

3. A stationary plankton sampler as claimed in claim **2** wherein:
the first trigger means includes a spring biased trigger shaft which extends transverse the cocking plunger and is movable between depressed and retracted positions, the trigger shaft in its depressed position engaging and retaining the cocking plunger in its depressed position and the trigger shaft in its retracted position freeing the cocking plunger to move to its retracted position.

4. A stationary plankton sampler as claimed in claim **3** wherein:
the stop means includes a spring biased stop plunger which is movable between depressed and retracted positions, the stop plunger in its depressed position lockingly connecting with the gear train and the stop plunger in its retracted position freeing the gear train.

5. A stationary plankton sampler as claimed in claim **4** wherein:
the second trigger means includes a stop rod which is movable transverse the stop plunger, the stop rod in a first position retaining the stop plunger in its retracted position and in a second position releasing the stop rod to its depressed position.

6. A stationary plankton sampler as claimed in claim **5** including:
control means responsive to a cable messenger for selectively actuating the trigger shaft from its depressed position to its retracted position and selectively operating the stop rod from its first position to its second position.

7. A stationary plankton sampler as claimed in claim **6** wherein:
the support means includes top, middle and bottom plates;
the gear train being mounted to and located between the middle and bottom plates;
the cocking plunger being mounted to and extending through the middle plate to be engageable with the gear train;
a sprocket located between the middle and top plates and drivingly connected to said gear train through the middle plate; and
the stop plunger being mounted to and extending through the top plate so as to be engageable with said sprocket.

8. A stationary plankton sampler as claimed in claim **7** wherein:
the support means further includes a vertical frame;
the control means being mounted to said vertical frame; and
the trigger shaft and the stop rod being mounted to the middle and top plates respectively and extending transverse said vertical frame.

9. A stationary plankton sampler as claimed in claim **8** wherein:
the propelling means includes a hollow cylinder and an impeller mounted therein;
the hollow cylinder being mounted to the bottom of the bottom plate; and
means extending through the bottom plate and drivingly connecting the gear train to said impeller.

10. A stationary plankton sampler as claimed in claim **9** wherein:
the power means includes a spring drum and arbor which are mounted between the top and middle plates; and
ratchet means drivingly connected to the arbor.

References Cited

UNITED STATES PATENTS

2,720,047	10/1955	Isaacs	43—7
3,242,740	3/1966	Niskin	73—425.4
3,310,984	3/1967	Swanson	43—4 X
3,412,498	11/1968	Niskin	43—8

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43—7; 73—170, 421